

5 August 1994

### AEROSPACE GROUND EQUIPMENT (AGE)

1. **Objective.** This Air National Guard manpower standard (ANGMS) is published as prescribed in AFI 38-201, *Determining Manpower Requirements* (formerly AFR 8-10, *Air Force Manpower Determinant (AFMD) System*, 18 March 1991). This ANGMS quantifies the full-time manpower required to accomplish the tasks described in the work center description for varying levels of workload.

2. **Authority.** Air National Guard Regulation 66-14, *Maintenance Management, Air National Guard*, contains policy and procedural guidance for the AGE work center. This ANGMS has been developed in accordance with procedures contained in AFPAM 38-208V1, *Air Force Management Engineering Program (MEP) Processes* (formerly AFR 25-5, *Air Force Management Engineering Program (MEP) Policies, Responsibilities, and Requirements*, 16 May 1988).

3. **Applicability.** This standard applies to all Air National Guard flying units except the 162nd Fighter Group and the 184th Fighter Group. This standard only applies to peacetime operations.

4. **Standard Data:**

- a. Classification. Type II.
- b. Approval Date. 2 Feb 94.
- c. Man-hour Data Source. Operational Audit method (historical record and technical estimate techniques).
- d. Standard Manpower Equation:

| AIRCRAFT |            | NUMBER | EQUATION |
|----------|------------|--------|----------|
| TYPE     | AUTHORIZED |        |          |
| (1)      | F-16       | 24     | Y = 7    |
| (2)      | F-16       | 18     | Y = 7    |
| (3)      | F-15       | 24     | Y = 7    |
| (4)      | F-15       | 18     | Y = 7    |
| (5)      | KC-135     | 10     | Y = 7    |
| (6)      | C-141      | 8      | Y = 6    |
| (7)      | C-130      | 8      | Y = 5    |
| (8)      | C-130      | 12     | Y = 6    |
| (9)      | C-130      | 16     | Y = 6    |
| (10)     | C-130      | 4      | Y = 5    |
| (11)     | C-130      | 5      | Y = 5    |
| (12)     | C-130      | 6      | Y = 5    |
| (13)     | A-10       | 24     | Y = 6    |
| (14)     | A-10       | 18     | Y = 6    |
| (15)     | RF-4       | 18     | Y = 6    |
| (16)     | RF-4       | 6      | Y = 3    |

e. **Workload Factor:**

- (1) Title. Primary Aircraft Authorized.
- (2) Definition. The number of primary aircraft authorized at an applicable location.
- (3) Source. USAF Program Document (PD), Volume II, maintained by NGB/FM.

No. of Printed Pages: 10

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**5. Application Instructions:**

- a. The valid man-hour range for this ANGMS is 515.25 through 1455.75. If this range is exceeded, use this standard as a guide.
- b. Determine the whole manpower requirements for this work center and refer to the appropriate column in the standard manpower table at attachment 2 to determine the required specialties.
- c. Refer to attachment 2 for application of variances to this manpower standard.

**6. Statement of Conditions:**

- a. This standard quantifies manpower requirements for powered AGE only. If the work center at any location is also responsible for nonpowered AGE, authorizations earned by this standard are to be added to those earned for nonpowered AGE.
- b. The conditions listed below had no affect on the development of this standard nor will they affect future applications. Analyses of these levels of service indicate no manpower impact.
  - (1) Minimum response rates.
  - (2) Minimum manpower levels.
  - (3) Standardized crew complements.
  - (4) Safety considerations.
  - (5) Aircraft turnaround times.
  - (6) Length of waiting periods.
  - (7) Levels of backlog.
  - (8) Hours of operation.

**PUBLISHED UNDER AUTHORITY OF THE SECRETARY OF THE AIR FORCE**

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**4 Attachments**  
**1. Work Center Description**  
**2. Standard Manpower Table**  
**3. Application of Variances**  
**4. Hours of Operation**

## **WORK CENTER DESCRIPTION**

### **Aerospace Ground Equipment (AGE)**

#### **DIRECT:**

##### **1. INSPECTION:**

**1.1. PERFORMS PERIODIC INSPECTION.** Inspects AGE unit in accordance with applicable Periodic Inspection Work Card, performs required maintenance, and performs operational check.

**1.1.1. INSPECTS TURBINE GENERATOR.**

**1.1.2. INSPECTS DIESEL GENERATOR (LARGE).**

**1.1.3. INSPECTS DIESEL GENERATOR (SMALL).**

**1.1.4. INSPECTS MOTOR GENERATOR.**

**1.1.5. INSPECTS LIGHT STAND.**

**1.1.6. INSPECTS HEATER.**

**1.1.7. INSPECTS HIGH PRESSURE AIR COMPRESSOR.**

**1.1.8. INSPECTS LOW PRESSURE AIR COMPRESSOR (ENGINE).**

**1.1.9. INSPECTS LOW PRESSURE AIR COMPRESSOR (ELECTRIC).**

**1.1.10. INSPECTS TURBINE COMPRESSOR.**

**1.1.11. INSPECTS CABIN LEAK TESTER.**

**1.1.12. INSPECTS HYDRAULIC TEST STAND (ENGINE).**

**1.1.13. INSPECTS HYDRAULIC TEST STAND (ELECTRIC).**

**1.1.14. INSPECTS AIR CONDITIONER (ENGINE).**

**1.1.15. INSPECTS AIR CONDITIONER (ELECTRIC).**

**1.1.16. INSPECTS BOMBLIFT TRUCK.**

**1.1.17. INSPECTS LOAD BANK.**

**1.1.18. INSPECTS POWERED MAINTENANCE STAND.**

**1.1.19. INSPECTS AIR CYCLE MACHINE.**

**1.1.20. INSPECTS BLOWER/VENT.**

**1.1.21. INSPECTS DEICER.**

1.1.22. INSPECTS HYDRAULIC JACKING MANIFOLD.

1.1.23. INSPECTS CORROSION SPRAY CART.

1.1.24. INSPECTS MISCELLANEOUS EQUIPMENT

1.2. PERFORMS SPECIAL INSPECTION. Performs special inspection as dictated by appropriate authority.

1.2.1. INSPECTS TURBINE GENERATOR.

1.2.2. INSPECTS DIESEL GENERATOR (LARGE).

1.2.3. INSPECTS DIESEL GENERATOR (SMALL).

1.2.4. INSPECTS MOTOR GENERATOR.

1.2.5. INSPECTS LIGHT STAND.

1.2.6. INSPECTS HEATER.

1.2.7. INSPECTS HIGH PRESSURE AIR COMPRESSOR.

1.2.8. INSPECTS LOW PRESSURE AIR COMPRESSOR (ENGINE).

1.2.9. INSPECTS LOW PRESSURE AIR COMPRESSOR (ELECTRIC).

1.2.10. INSPECTS TURBINE COMPRESSOR.

1.2.11. INSPECTS CABIN LEAK TESTER.

1.2.12. INSPECTS HYDRAULIC TEST STAND (ENGINE).

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1.2.16. INSPECTS BOMBLIFT TRUCK.

1.2.17. INSPECTS LOAD BANK.

1.2.18. INSPECTS POWERED MAINTENANCE STAND.

1.2.19. INSPECTS AIR CYCLE MACHINE.

1.2.20. INSPECTS BLOWER/VENT.

1.2.21. INSPECTS DEICER.

1.2.22. INSPECTS HYDRAULIC JACKING MANIFOLD.

1.2.23. INSPECTS CORROSION SPRAY CART.

**1.2.24. INSPECTS MISCELLANEOUS EQUIPMENT.**

**2. UNSCHEDULED MAINTENANCE.** Troubleshoots and diagnoses malfunction; removes, replaces, and repairs component; conducts operational check of AGE unit and verifies corrective action taken; and corrects delayed discrepancy discovered during earlier inspection.

**2.1. MAINTAINS TURBINE GENERATOR.**

**2.2. MAINTAINS DIESEL GENERATOR (LARGE).**

**2.3. MAINTAINS DIESEL GENERATOR (SMALL).**

**2.4. MAINTAINS MOTOR GENERATOR.**

**2.5. MAINTAINS LIGHT STAND.**

**2.6. MAINTAINS HEATER.**

**2.7. MAINTAINS HIGH PRESSURE AIR COMPRESSOR.**

**2.8. MAINTAINS LOW PRESSURE AIR COMPRESSOR (ENGINE).**

**2.9. MAINTAINS LOW PRESSURE AIR COMPRESSOR (ELECTRIC).**

**2.10. MAINTAINS TURBINE COMPRESSOR.**

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**2.16. MAINTAINS BOMBLIFT TRUCK.**

**2.17. MAINTAINS LOAD BANK.**

**2.18. MAINTAINS POWERED MAINTENANCE STAND.**

**2.19. MAINTAINS AIR CYCLE MACHINE.**

**2.20. MAINTAINS BLOWER/VENT.**

**2.21. MAINTAINS DEICER.**

**2.22. MAINTAINS HYDRAULIC JACKING MANIFOLD.**

**2.23. MAINTAINS CORROSION SPRAY CART.**

**2.24. MAINTAINS MISCELLANEOUS EQUIPMENT.**

**3. AGE SERVICING.** Performs servicing inspection and adds fluid and fuel to unit. Performs minor repair discovered during servicing of unit.

**4. EQUIPMENT DISPATCH.** Delivers and picks up equipment as requested by maintenance control and flight line expediter.

**5. EQUIPMENT CLEANING.** Washes equipment to maintain clean, serviceable unit.

**6. STORAGE AND SHIPMENT:**

**6.1. PREPARES SEASONAL EQUIPMENT.** Prepares seasonal equipment including air conditioner, heater, etc., for temporary storage.

**6.2. PREPARES EQUIPMENT FOR SHIPMENT.**

**6.3. MAINTAINS HAZARDOUS CARGO CERTIFICATION.** Maintains certification for preparation of hazardous cargo for shipment.

**7. EQUIPMENT RECORD AND FORM MAINTENANCE.** Maintains required equipment record or form.

**8. CORROSION CONTROL PROGRAM:**

**8.1. PREPARES UNIT.** Prepares unit for repainting and paints the unit of equipment.

**8.2. STENCILS UNIT.** Stencils and applies decal to unit after painting.

**8.3. PERFORMS OPERATIONAL CHECK.** Conducts operational check of AGE unit after painting.

**9. TIME COMPLIANCE TECHNICAL ORDER (TCTO) MAINTENANCE.** Performs maintenance required on AGE unit in accordance with the applicable TCTO and completes documentation.

**10. OPERATOR TRAINING:**

**10.1. MAINTAINS COURSE OUTLINE.** Maintains course outline for AGE operator certification training.

**10.2. PERFORMS OPERATOR TRAINING.** Performs operator training and certifies proficiency on AGE unit or special purpose vehicle.

**11. HAZARDOUS WASTE AND PETROLEUM RECYCLING PROGRAM MANAGEMENT.** Identifies, labels, contains, and disposes of hazardous waste; maintains hazardous waste accumulation point, satellite collection area and container; and inspects and maintains protective equipment.

**12. SUPPLY PROCUREMENT.** Receives, issues, maintains, and inventories tools and equipment. Maintains bench stock and requisitions and receives parts.

**13. FUELS MANAGEMENT.** Checks fuel level and orders fuel. Maintains AF Form 1994, Fuel Issue.

**14. SHOP INDUSTRIAL EQUIPMENT MAINTENANCE.** Inspects and repairs shop industrial equipment.

**15. COMPOSITE TOOL KIT (CTK) MAINTENANCE.** Performs start-of-day and end-of-day inspection. Maintains CTK by inspecting for serviceability, performing corrosion control, and replacing tool.

**16. TECHNICAL DATA SUBACCOUNT MAINTENANCE.** Receives and posts data and change to file. Maintains file for serviceability.

**17. DOCUMENTATION.** Completes AFTO form or enters data into the core automated maintenance system.

**18. UNIT TRAINING ASSEMBLY (UTA) AND MOBILITY REQUIREMENT.** Performs planning and scheduling task associated with preparation for UTA weekend and mobility requirement.

**INDIRECT:** Indirect work involves those tasks that are not readily identifiable with the work center's product or service. The major categories of standard indirect work are Supervision, Administration, Meetings, Training, Supply, Equipment Maintenance, and Cleanup. See AFMS 00AA for the standard indirect description.

| STANDARD MANPOWER TABLE           |       |       |                                      |   |   |   |   |   |    |  |  |  |  |
|-----------------------------------|-------|-------|--------------------------------------|---|---|---|---|---|----|--|--|--|--|
| WORK CENTER TITLE/CODE            |       |       | STANDARD APPLICABILITY MANHOUR RANGE |   |   |   |   |   |    |  |  |  |  |
| Aerospace Ground Equipment/234000 |       |       | 515.25 - 1455.75                     |   |   |   |   |   |    |  |  |  |  |
| AIR FORCE SPECIALITY TITLE        | AFSC  | GRADE | MANPOWER REQUIREMENT                 |   |   |   |   |   |    |  |  |  |  |
| Systems<br>Aerospace Ground Equip | 454XX | CIV   | 1                                    | 1 | 1 | 1 | 1 | 1 | 1  |  |  |  |  |
|                                   | 454X1 | CIV   | 3                                    | 4 | 5 | 6 | 7 | 8 | 9  |  |  |  |  |
| TOTAL                             |       |       | 4                                    | 5 | 6 | 7 | 8 | 9 | 10 |  |  |  |  |
| AIR FORCE SPECIALITY TITLE        | AFSC  | GRADE | MANPOWER REQUIREMENT                 |   |   |   |   |   |    |  |  |  |  |
| TOTAL                             |       |       |                                      |   |   |   |   |   |    |  |  |  |  |



## APPLICATION OF VARIANCES

1. The standard manpower equation in paragraph 4d depicts the core manpower requirements by aircraft type. Below are the ranges of the number of pieces of aerospace ground equipment (AGE) authorized which relate to the core. If any location exceeds this range of total pieces authorized, a positive manpower variance may be required. If any location has less total pieces of AGE authorized, a negative manpower variance may be required.

| AIRCRAFT TYPE | PIECES OF AGE AUTHORIZED |
|---------------|--------------------------|
| F-16          | 104 to 150               |
| F-15          | 122 to 144               |
| KC-135        | 108 to 168               |
| C-130         | 44 to 90                 |
| A-10          | 88 to 102                |
| RF-4G         | 81 to 109                |

2. Because each class of equipment has its own distinct maintenance requirements (i.e., generators require more monthly man-hours for maintenance than heaters), the specific equipment authorized will impact man-hour requirements. For that reason, equipment equivalents were developed. These must be used to determine whether or not a variance from the core is required for any given unit.

3. The determination of variances should be accomplished on an exception basis. The core requirements are valid for most units within the Air National Guard. If any unit is to be tested to determine that a variance is required, a complete application must be accomplished for that unit.

4. The following is required to perform a complete manpower requirements price-out of an Air National Guard unit.

- a. Standard Manpower Equation.  $Y = 63.93X^{.4260}$
- b. Workload Factor. An Equipment Equivalent.
- c. Source. Weapon System Specific Table of Allowance (TA), part A, section BB, maintained at ANGRC/LGSE. To obtain the TAs for other functions supported, contact the unit's AGE work center.

5. For each unit to be priced-out, the number of each piece of equipment above must be obtained from the source. A disc is provided by ANGRC/XPME to the requirements branch which will accomplish all required computation. See the sample spreadsheet at attachment 4.

## SAMPLE APPLICATION SPREADSHEET ANGMS 234000

AGE APPLICATION  
UNIT:

This spreadsheet will perform all computations to price out ANGMS 234000, Aerospace Ground Equipment. Refer to the source in the ANGMS and enter the correct number of pieces of equipment authorized in the column labeled "Number Auth" below.

| Equipment<br>Type           | Number<br>Auth | Factor                 | Equivalent        |
|-----------------------------|----------------|------------------------|-------------------|
| Turbine Generator           | 1              | 6.93                   | 6.93              |
| Diesel Generator (Large)    |                | 6.72                   | 0                 |
| Diesel Generator (Small)    | 2              | 4.72                   | 9.44              |
| Motor Generator             | 0              | 5.27                   | 0                 |
| Light Stand                 | 0              | 5.27                   | 0                 |
| Heater                      | 0              | 5.19                   | 0                 |
| High Press Air Comp         | 0              | 6.35                   | 0                 |
| Low Press Air Comp (Engine) | 0              | 5.23                   | 0                 |
| Air Compressor (Electric)   | 0              | 7.96                   | 0                 |
| Turbine Compressor          | 0              | 6.66                   | 0                 |
| Cabin Leak Tester           | 0              | 6.08                   | 0                 |
| Hydraulic Test Stand (Eng)  | 0              | 8.80                   | 0                 |
| Hydraulic Test Stand (Elec) | 0              | 9.14                   | 0                 |
| Air Conditioner (Engine)    | 0              | 5.23                   | 0                 |
| Air Conditioner (Electric)  | 0              | 6.56                   | 0                 |
| Bomblift Truck              | 0              | 6.12                   | 0                 |
| Load Bank                   | 0              | 7.32                   | 0                 |
| Powered Maintenance Stand   | 0              | 9.93                   | 0                 |
| Air Cycle Machine           | 0              | 4.44                   | 0                 |
| Blower/Vent                 | 0              | 3.86                   | 0                 |
| Deicer                      | 0              | 7.74                   | 0                 |
| Hydraulic Jacking Manifold  | 0              | 4.78                   | 0                 |
| Spray Cart                  | 0              | 8.92                   | 0                 |
| Miscellaneous Equipment     | 0              | 6.62                   | 0                 |
|                             | TOTAL          | 3                      | 0                 |
|                             |                |                        | 16.37             |
| Equivalents                 | Man-hours      | Fractional<br>Manpower | Whole<br>Manpower |
| 16.37                       | 210.324        | 1.421                  | 2                 |

Refer to the Manpower Table to determine the distribution of the "Whole Manpower" authorizations by Air Force Specialty.